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the triangle, and the square root of one-half the difference will be the lesser root of the triangle.

Next take the hypotenuse and the even side of any prime right-angled triangle. The sum and the difference will each be a perfect square number, and their square roots will be the sum and the difference of the two roots of the triangle.

A given area, or a given perimeter, can belong to but one prime right-angled triangle, and either the area or the perimeter being given it is easy to find the other dimensions. In case of one side only being given it has been shown that the given side may belong to several different triangles, but all of them are easily found.

C. W. SHEDD.

Columbus, Miss.

PROBLEMS FOR SOLUTION.

ARITHMETIC.

110. Proposed by F. P. MATZ, Sc. D., Ph. D., Professor of Mathematics and Astronomy in Irving College, Mechanicsburg, Pa.

By measuring with a yard $m=12\frac{1}{2}\%$ too short, my profits are $n=25\%$ of my sales. If my yard be $p=10\%$ too long, what per cent. of my sales will be my profits?

111. Proposed by F. P. MATZ, Sc. D., Ph. D., Professor of Mathematics and Astronomy in Irving College, Mechanicsburg, Pa.

By what per cent. of its original dimensions must a linear yard of steel rail, weighing 60 pounds, be increased so that it may weigh 75 pounds?

*** Solutions of these problems should be sent to B. F. Finkel not later than May 10.

ALGEBRA.

98. Proposed by B. F. FINKEL, A.M., M.Sc., Professor of Mathematics and Physics, Drury College, Springfield, Mo.

A and B agreed to reap a field of grain for 90 shillings. A could reap it in 9 days, and they promised to complete it in 5 days; but B, who did not work as quickly as he expected, was obliged to call to his assistance C, an inferior workman, who worked the last two days, in consequence of which B received 3s. 9d. less than would otherwise have been due him. In what time could B and C each reap the field? From *Milne's High School Algebra*.

99. Proposed by C. H. JUDSON, Greenville, S. C.

Seven persons met at a summer resort, and agreed to remain as many days as there are ways of sitting at a round table, so that no one shall sit twice between the same two companions. They remained fifteen days. It is required to show in what way they may have been seated.

*** Solutions of this problem should be sent to J. M. Colaw not later than May 10.